

Observations on the change of the Magnetic Needle.

The needle is subject to sudden and violent changes, which have no known law. They are sometimes coincident with a thunder-storm or an Aurora Borealis (during which changes of nearly 1° in one minute $2\frac{1}{2}^{\circ}$ in eight minutes and 10° in one night have been observed but often have no apparent cause except an otherwise invisible magnetic storm.

The needle moves Westwards from 8 O'clock A. M. till about 2 P. M. over an arc of $10'$ to $15'$ and then gradually returns to its former position reaching its maximum about two O'clock P. M. and its minimum about 8 O'clock A. M.

The variation of the needle on the evening of August 3rd 1869 was ascertained by me to be $N. 4^{\circ} 17' E.$ Observation by the North Star was its Declination

T. No. 14. N. R. No. 2. E. of 2nd.

1.

30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
1.56																															
1.00																															
1.78																															
1.12																															
1.00																															

* The line between Sections 24 & 25 is also found on page 21.

* This line is found on page 22

* " " " " " 22

* " " " " " 23.

The figures in red ink indicate the page.

2.

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Township N. 14. N. R. 2. E. 2nd Mer. Ind. 3.

Fractional

East Boundary

chs. lks.

Var. 6⁰⁰' E.

From Cor. to Sec. 25 & 24 from which
a Hickory 10. S. 15. W. 40

do. 8. N. 18. E. 27.

North On the East side of Sec. 24.

16.50 a Hackberry 14 inch^s diam.

37.00 a Brook 6 lks. S. E.

40.00 qtr Sec. Cor. W. Oak 24. S. 29. W. 12
Beech 13. N. 21. E. 27.

52.35 a Hickory 12 inch^s diam.

80.00 Set. post. Cor. to Sec 13 & 24

Beech 20. S. 11. W. 40

Ash 10. N. 9. E. 17.
good farm land.

North On the East side of Sec. 13.

24.80 a Span. Oak 40 inch^s diam

40.00 qtr. Sec. Cor. Beech 10. S. 33. E. 31

Hickory 18. N. 49. W. 13.

56.06 a Hickory 18 inch^s diam.

4 T. N. 14. N. R. No. 2. E. 2^d Mer. Ind.

80,00 Set post in Brook, 8 lks Course E.
 Corner of Sec^s 12 & 13.
 Sycamore 20 S. 48. W. 40
 do. 30 N. 48 W. 28.
 Good farming land B. S. 16 &c.

North On the East Side of Sec 12
 11,30 a Brook 7 lks East
 27,60 a Sugar 14 inc^s diam.
 40,00 qtr. Sec. Cor. --- 6. S. 26 E. 17.
 Sugar 26. N. 70 W. 27.
 62,60 a Beech 13 inc^s diam.
 74,80 a Creek 25 lks S. E.
 80,00 Set-post Corner to Sec^s 1 & 12
 Beech 20. S. 20 E. 20
 do. 18 N. 20 E. 5.
 Land & Timber Similar

North On East Side of Sec 1.
 29,75 An Ash 14 inc^s diam.
 40,00 qtr. Sec. Cor. Hickory 14 S. 55 W. 10
 Oak 15. N. 69 E. 27.

T. No 14. N. R. No 2. E. 2^d. Mer. ^{1.4}Ind. 5.

75, 86. Set. Post. cor. of. Ran: 2 d. 3. E. Town.
 14 & 15 N. Beech. 18. S. 54. W. 13.
 do. 14. N. 76. E. 46.
 Good farm. L. Sugar Beech Ash &
 undergrowth spice.
 Surveyed by
 John Mc Donald D. S.

Subdivisions

From Cor. of. Secs 23. 24. 25 & 26 from
 which — a Beech 7. N. 23. E. 9. lks.
 Buckeye 10. S. 70. W. 12. "

East Bet. Secs 24 & 25 on Random. July 17. 1820.
 40. 00 Temporary qtr. Sec. Post.
 80. 45. Intersected E. Line 72 lks. South of P.

West Corrected "
 40. 22½ qtr. Sec. Cor. Beech 6. N. 5 W. 19. "
 Sugar 14. S. 14. W. 30.
 80. 45. Sec. Cor.
 Land & Tim. Same July 17th 1820.

6. T. No. 14. N. R. No. 2. E. 2nd Mer. Ind.

North.	Between Secs 23 & 24.
24,00	a Beech 10 incs diam.
40,00	qtr. Sec. Cor. Beech 14. N. 51. E. 4.
	do. 14. S. 40. W. 47.
55,50.	a. Stream 5 links S. E.
80,00.	Set. Post corner to Secs 13. 14. 23 & 24
	Sugar 12 N. 14. E. 35.
	do. 8. S. 7. W. 7.
	Land. 2 nd Rate Beech, Oak, Hickory S. &c.
East.	" Between Secs 13 & 14 on Random
40,00	Temp. qtr. Sec. Post.
80,54.	Intd. E. Line 60 lks South of Post.
West.	" Corrected.
40.27 1/2	qtr. Sec. Cor. Hornbeam 8. S 13. W. 13.
	B. Walnut 20. N. 65. E. 38.
	Land 1 st rate Ash, Sugar. Walnut &c.
North	" Between Secs 13 & 14.
25,10	a Beech 12 incs diam.
40,00	qtr. Sec. Cor. Beech 10. S. 20. W. 25.

Y. No. 14. V. R. No. 2 E. 2^d. Mer. Ind. ^{ly}.

		Sugar 12. N. 7. E. 18.
54.30	a. W. Oak 18 inc ^s diam.	
80.00	Set. post. Cor. to Sec ^s 11. 12. 13. 14.	
	W. Oak 12. N. 40. E. 20.	
	Clsh. 4. S. 27. W. 32.	
	Land flat 2 nd rate Beech. W. Ash Oak &c	
	"	
East.	Between Sec ^s 12 & 13 on <u>Random</u> .	
40.00	Comp. qtr Sec. Post.	
80.43	Intd. E. Line 69 lks South of Post	
	"	
West	Corrected July 18. 1820.	
40, 22½	qtr. Sec. Cor. Beech 10. N. 31. W. 14.	
	do. 8. S. 24. W. 18.	
	Land 2 nd rate Beech. Oak. W. Ash. &c.	
	"	
North.	Between Sec ^s 11 & 12.	
27. 65	a Beech 12 inc ^s diam.	
40.00	qtr. Sec. Cor. W. Oak 20. N. 81. E. 10.	
	do. 30. N. 84. W. 43.	
76, 25	a. B. Walnut 12 inc ^s diam.	
80.00	Set. Post. Cor. to Sec ^s 1. 2. 11. & 12.	

87 N. 14. V. R. N. 2. E. 2nd Mer. Ind.

	B. Oak 12 S. 13. E. 3.
	do. 12 N. 47. W. 19.
	Land level 2 nd rate Oak. Beech. Sugar.
East	" Between Secs 1 & 12. on Random
40,00	Temp: qtr Sec. post.
71,00	a stream 5 lks S. E.
80,40.	Intd. E. line 12 q lks South of post.
West.	Corrected
40,20	qtr Sec. bor. W. Oak. 6. N. 45 E. 23.
	Buck eye 5. S. 45 W. in
80,40.	Sec. bor.
	Land 2 nd rate B. O. S. Undg th Spic th
North.	Between Secs 1 & 2
31,85	a Beech 14 inch ^s diam.
40,00.	qtr Sec. bor. Beech 10. S. 12 E. 19.
68,55.	a W. Oak. 14 ^{do} inch ^s diam. 14. N. 12. W. 9.
76,00	a stream 10 lks East.
79,78	Intd. Line at Post. Land 2 nd Rate
	Beech. Oak. W. Walnut & lms &c.

T. N^o 14. N. R. N^o 2. E 2nd Mer. Ind. 9.

44s. lks.	From Cor. of Secs. 22. 23. 26 & 27 from which - Beech 8. N. 35. W. 4. do. 6. S. 44. E. 32.
East.	On. Random Betw. Secs. 22 & 26
40, 00	Temp. qtr. Sec. Post.
81, 20	Int'd East. Line 56. lks. South of Post Land 2 nd date beech. Oak. Sugar. etc.
West	Corrected
40, 60	qtr. Sec. Cor. Beech 10. N. 46 W. 15. do 18. N. 54. E. 15.
81, 20.	Section corner.
North	Between Secs. 22 & 23.
20, 00	a Stream 5 lks. East.
20, 50.	a Poplar 30 inc ^s diam
23. 50.	a Stream 3 lks. East
40, 00	qtr. Sec. Cor. Beech 14. N. 57. E 13. do. 8. S. 62. W. 11.
62. 50.	a. Sugar 24. inc ^s diam.
80, 00	Set-post Cor. to Secs. 14. 15. 22 & 23. Sugar 10 N. 33. E. 29.

10. T. No. 14. N. R. No. 2. E 2^d Mer. Ind.

lks. lks.	Sugar 8. S. 33. W. 20. Land 2 nd rate- Beech. Oak. Sugar elm &c.
East	" Bet. Secs 14 & 23 on Random
40.00	Temp. qtr. Sec. post
81.09	Intd. E. L 66. North of Post
West	" Corrected
40.54 1/2	qtr Sec. Cor. Beech 12. N. 6. E. 38. do 12. S 2. E. 46.
81.09.	Sect. Corner Land and Timber same July 19 th 1820.
North	" Between Secs 14 & 15
2.50.	a Stream 5 lks S. E.
37.05	a Beech 12 incs diam
40,00	qtr. Sec. Cor. B. Walnut 20. N 42. W. 14. Beech 14. S. 82. E. 15.
46,00	a Stream 3 lks S. E.
64.83.	a Beech 14 incs diam.
80.00	Set. Post. Cor. to Secs 10. 11. 14. & 15.

T. No. 14. N. R. N. 2. E. 2nd Mer. Ind. 11.¹⁷

	W. Oak 30. S. 60. E. 50. Poplar 50. N. 34. W. 23. Land 2 nd rate. Beech. Poplar. Oak. Sugar &c.
East	" On Random Bet. Secs 11 & 14. Temp. qtr. Sec. Post. 81.00. Intd. E. L. 50 lks North of Post
West	" Corrected. 40.50 qtr. Sec. Corner Beech 14. N. 68. E. 5 do 12. S. 45. W. 30. 81.00 Sec. Corner " Land and Timber as before.
North	" Betw. Secs 10 & 11. 25.70 a Beech 24 incs diam. 40.00 qtr. Sec. Cor. B. 8. S. 65. W. 20. W. Oak 12. N. 57. E. 24. 62.21 a Beech 14 incs diam. 80.00 Set. Post. Cor. of Secs 2. 3. 10 & 11. Beech 18. N. 68. W. 10. Land 2 nd rate do 14. S. 59. E. 44. Beech. Oak, Sugar &c.
East	" Betw. Secs 2 & 11. on Random.

12. T. No. 14. N. R. No. 2. E 2nd Mer. Ind.

40.00	Temp. Quar. Sect. Post.
81.00	Intd. E. S. 24 lks. North of Post.
West.	Corrected
40.50.	qtr. Sec. Cor. Beech 8. S. 40. W. 2.
	B. Oak. 18. N. 43. W. 11.
81.00	Sect. Corner.
	Land & Timber as before.
North	"
	Between Secs 2 & 3.
33.40.	a Hickory 12 inc ^s diam.
40.00	qtr. Sec. Cor. Sugar 12. S. 58. W. 47.
	Beech 12. N. 74. E. 10.
79.70.	Intd. N. L. 67. West. of Post.
	Beech 14. N. 67. E. 36.
	do. 12. S. 18. W. 16.
	Land 2 nd rate Beech, Oak & very Bushy.
	"
	From Cor. of Secs 21. 22. 27 & 28 fr. which
	Beech 14. N. 76. E. 24.
	Hickory 10. S. 45. W. 5.
East.	Bet. Secs 22 & 27. on Random.

1.8

T. No. 14. N. R. No. 2. E. 2nd Mer. Incl. 13.

40.00	qtr. Sec. Post- Temp.
81.00	Incl. E. L. 73. lks. North of Post-
West.	"
	Corrected.
40.50	qtr. Sec. Cor. Beech 12. N. 57. W. 30
	do. 4. S. 25. E. 2.
81.00	Sec. Cor. Land 2 nd rate B. W. A. O. Pop. & c.
North	"
	Between Secs 21 & 22.
25.00	a Hickory, 12 incs diam
40.00	qtr. Sec. Cor. Beech 14. N. 60. E. 24.
	do. 18. S. 40. W. 21.
61.00	a Hickory, 12 incs dia
80.00	Set. Post. Cor. of Secs 15. 16. 21 & 22
	Ash 12. N. 12 W. 23
	Beech 14. S. 19. W. 45.
	Land 2 nd rate Beech. Sugar. Oak & c.
East	"
	Betw. Secs 15 & 22 on Random
40.00	Temp. Quarter Sec. Post.
73.00	a Spring N. E.
76.00	a Stream. 3. lks. N. E.

14. T. No. 14. N. R. No. 2. E. 2nd Mer. Ind.

81.05	Int'd, E. Line 15 lks North of Post.
West	Corrected
40.52½	qtr Sec. Cor. Beech 10. N. 38. E. 16. do. 10. S. 71. W. 18.
81.05	Sec. Cor. Land 2 nd rate
North	" Between Secs 15 & 16.
31.00	An Ash 18 incs diam.
40.00	qtr. Sec. Cor. W. Oak 12. N. 26. W. 17. Beech 18. S. 25. E. 45.
63.36	a. W. Oak 10. incs diam.
80.00	Set. Post. Cor. to Secs q. 10. 15 & 16. Poplar 20. N. 59. W. 16 lks Ash 20. S. 46. E. 25 Land same July 21. 1820.
East	" Between Secs 10 & 15 on Random
40.00	Temp. qtr. Sec. Post.
81.20	Int'd, E. line 27 lks N. of Post.
West.	" Corrected.

T. N^o. 14. N. R. N^o. 2 E. 2^d Mer. Ind. 15. ¹⁻⁹

40.60	qtr. Sec. Cor. Beech 12. N. 87. W. 20 do. 4. N. 89. E. 11 Land 2 nd rate Beech, Oak, Sugar & c.
North.	" Between Sec ^s 9 & 10
11.95	a Beech 4 inc ^s diam.
40.00	qtr. Sec. Cor. Hickory 12. N. 40. E. 13 do. 12. S. 45. W. 42.
52.15	An Elm 24 inc ^s diam.
80.00	Set. Post. Cor. of Sec ^s 3. 4. 9 & 10. W. Oak 8 N. 36 E. 16. Ironwood 6. S. 5 W. 8. Land & Timber same with Elm
East	" Bet. Sec ^s 3 & 10 on Random
40.00	Temp. qtr. Sec. Post.
81.28	Intd. East Line 19 lks. North of Post
West	" Corrected
40.64	qtr. Sec. Cor Ash 12. S. 40 E. 13. Hickory 10. N. 25. W. 7.
81.28.	Sec. Cor. Land 2 nd rate Beech, Oak, Sugar & c.

16. T. No. 14. N. R. No. 2. E. 2nd Mer. Snd D.

North	Between Sects. 3 & 4.
22.00	a B. Oak. 30 in ^s dia.
40.00	qtr. Sec. Cor. Beech 14. N. 62. W. 20.
	do 12. S. 43. E. 2.
47.45	a Hickory. 24 in ^s diam.
79.00	Intd. N. line 20 lks West of Post
	Beech 5 S. 73. E. 3.
	do 12. S. 83. W. 28.
	Land & Timber as before
	From cor. of sec ^s 20. 21. 28. & 29.
	fr. which Beech 10. N. 27. W. 12.
	Poplar 50. S. 33. E. 23.
East	Between Sects 21 & 28 on Random
40.00	Temp. Quar. Sec. Post.
80.60	Intd. E. Line 30 lks. south of Post
West	Corrected.
40.30	qtr. Sec. Cor. Beech 5. S. 24. E. 26.
	Ash. 12. N. 20. W. 30.
80.60	Sec. Cor. Land 2 nd rate.
	Beech. Oak. Sugar & c.

T. No. 14. N. R. No. 2. C. 2nd Mer. Ind. 1¹⁰ 17.

North.	Bet. Secs 20 & 21.
13.00	a Beech 14 incs diam.
40.00	qtr. Sec. Cor. Beech 12. N. 87. E. 12.
	do. 7. N. 70. W. 24.
64.00	an Ash 10 incs diam.
80.00	Set. Post. Cor. to Secs 16. 17. 20 & 21.
	B. Walnut 24. N. 32. W. 23.
	Land 2 nd rate. Beech. Oak. Sug. Pop. & c.

East.	Between Secs 16 & 21. on Random
40.00	Temp. Quar. Sec. Post.
80.46.	Int'd. E. line 5 lks North of Post.

West	Corrected.
40.23.	qtr. Sec. Cor. Dogwood 4 S. 2. W. 25.
	W. Oak 24. N. 22. E. 25.
80.46.	Sec. Cor. Land 2 nd rate Beech. O. Pop. & c.

North	Betw. Secs 16 & 17.
17.50.	an Ash 30 incs diam.
40.00	qtr. Sec. Cor. W. Oak 20. S. 15. W. 44.
	Beech 12. N. 18. E. 45.

18. T. No. 14. N. R. No. 2. E. 2nd Mer. Ind.

41.00	a W. Oak 24 in ^s diam.
80.00	Set. Post. Cor. to Secs 8, 9. 16 & 17. Beech 14. N. 32. W. 7. Sugar 18. S. 35. E. 45. Land 2 nd rate Beech. Oak. Ash. &c.
East.	"
40.00	Temp. qtr. Sec. Post.
80.25.	Int'd. E. Line 70 lks South of Post.
West	"
40.12½	Corrected qtr. Sec. Cor. W. Oak 14. S. 52. W. 9. Beech. 12. N. 51. E. 13.
80.25	Sec. Cor. Land 2 nd rate B. O. Sug. and 9 th sp. ice
North	"
33.00	Between Secs 8 & 9. a Beech 24 in ^s diam.
40.00	g.p Beech 12. N. 75. E. 2.
63.00	Beech. 10. N. 46. W. 16. Beech 14 in ^s diam.
80.00	Set. Post. Cor. of Secs 4. 5. 8. & 9. Beech 10. N. 80. E. 23. Land 2 nd rate Buckeye 8. S. 63. W. 25. July 23. 1820.

T. No. 14. N. R. No. 2. E. 2nd Mer. Ind. 19.

East.	Bet. Secs 4 & 9 on Random
40.00	Temp. Quar. Sec. Post.
80.20.	Int'd, E. Line 14. lks. South of Post.

West.	Corrected
40.10.	qtr. Sec. Cor. Ash. 10. N. 20. W. 16. Beech 12. S. 26. E. 11.
80.20.	Sec. Cor. Land 2 nd rate B. A. Sug. Oak & c.

North	Bet. Secs 4. & 5.
23.45.	a Sugar 12 ins ^d diam.
40.00	qtr. Sec. Cor. Sugar. 18. N. 5. E. 8. do. 14. S. 20. W. 6.
66.35	a Sugar 14 ins ^d diam.
79.50.	Int'd, N. Line 200 lks West of. Post Beech 14. N. 3. W. 12. do. 12. S. 10. E. 23. Land 2 nd rate Beech. Oak & c.

East	Between Secs 24 & 25 on Random
40.00	Temp. Quar. Sec. Post.
80.45.	Int'd, E. Line 72 lks South of Post

20. T. No. 14. N. R. No. 2. E. 2nd Mer. Ind.

West. Corrected
 40.22½ qtr. Sec. Cor. Beech 6. N. 5. W. 19.
 Sugar 14. S. 14. W. 30.
 80.45. Sec. Cor. Land 2nd rate Be. Sug. Oak. Elm & c.

East On Random Betw. Secs 23. & 26.
 40.00 Temp. Quar. Sec. Cor.
 81.20. Int'd. E. Line 56 lks. South of Post
 Land 2nd rate Beech, Oak, Sugar & c.

West Corrected
 40.60 qtr. Sec. Cor. Beech 10. S. 76. W. 15.
 do. 18. N. 54. E. 15.
 81.20. Sec. Cor.

East Betw Secs 22 & 27 on Random
 40.00 Temp. Quar. Sec. Post.
 81.00 Int'd. E. Line 73. lks North of Post.

West Corrected
 40.50. qtr. Sec. Cor. Beech 12. N. 57. W. 30.
 do. 4. S. 25. E. 2.

1.12

T. No. 14. N. R. No. 2. E. 2nd Mer. Snd. 21.

81.00. Sec. Cor. Land 2nd rate Be. W. Ash. O. Pop. &c

East. Betw. Sects 21 & 28 on Random

40.00 Temp. quar. Sec. Post.

80.60. Intd. E. line 30 lks South of Post.

West. Corrected

40,30 qtr. Sec. Cor. Beech 5. S. 24. E. 26.

Ash 12. N. 20. W. 30.

80.60 Sec. Cor. Land 2nd rate Beech, Oak, Sug &c

This Township was surveyed by
W. B. Laughlin
Depty Survr

22.

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